



CONGENITAL CARDIOLOGY SOLUTIONS  
(PEDIATRIC CARDIOLOGY AND ADULT CONGENITAL HEART DISEASE)

**ARRHYTHMIA RECURRENCE IN ADULT PATIENTS WITH SINGLE VENTRICLE PHYSIOLOGY FOLLOWING SURGICAL FONTAN CONVERSION**

ACC Oral Contributions

Georgia World Congress Center, Room B401

Monday, March 15, 2010, 11:15 a.m.-11:30 a.m.

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Session Title: Catheter and Surgical Interventions in Congenital Heart Disease: From Fetus to Adult

Abstract Category: Adult Congenital Heart Disease

Presentation Number: 0907-06

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**Background:** Atrial tachy-arrhythmia (AT) is a recognized sequel of Fontan palliation, especially in right atrial-to-pulmonary artery (RA-PA) Fontans. Conversion to total cavopulmonary connection (TCPC) with arrhythmia surgery is the treatment of choice for decreasing AT.

**Methods:** Single center retrospective review.

**Results:** Twenty-seven adults underwent Fontan conversion from RA-PA to TCPC, mostly for AT indications (24). Nine (33%) underwent conversion to a lateral tunnel (LT) and 18 (67%) to an extracardiac Fontan (EC). Two patients died < 30 days post-operatively. Both had liver failure and had been turned down for heart/liver transplantation. In hospital complications occurred in 15/27 patients (55%), including recurrence of AT requiring cardioversion in 6 (22%) and persistent pleural effusions in 4 (15%). Mean follow-up was 4.2 years (range 3 mts - 14 yrs). Functional capacity improved from mean NYHA class 1.8 pre-conversion to 1.2 post-conversion ( $p=0.008$ ). Twenty-one patients had concomitant arrhythmia surgery (MAZE in 12 patients with IART and Cox-MAZE in 9 patients with A-Fib +/- IART). Of these, 3/21 (14%) had AT recurrence > 3 months post-conversion. Two patients received a 'Trapdoor' modification to the extracardiac conduit, which allows easy access into the atria from the conduit without necessitating puncture through Gore-Tex material with a trans-septal needle.

**Conclusions:** Conversion from RA-PA Fontan to the extracardiac or lateral tunnel Fontan, with arrhythmia surgery, results in decreased AT recurrence and improved functional capacity. The risk of peri-operative mortality is highest in patients with cirrhosis. AT recurred in 14% of patients.